Title: **10051 - OCCUPATIONAL HEALTH HAZARDS ''BLOOD BORNE**
VIRAL HEPATTIS IN HAEMATEMESIS UNIT''

Authors: **Shadia E.Micheal, Ph. D. *, K haled A.K Farrag, MD. ****

Purpose: A study was done in haematemesis unit (HU) to evaluate the risk factors for the staff workers to get infection with hepatitis B&C viruses due to exposure to contaminated patients blood & fluids the effciency of joint infection control /occupational health program for the follow-up of accidental blood or bloody body fluid exposures in health care workers the purpose this study was to determine.
Methods: In our study, we have three groups of population: Group I: Twenty of haematemesis unit staff, included doctors, nurses & paramedical workers, were subjected to a questionnaire, with a guarantee of anonymity to the respondents.
Group II: Twenty of official employers, were not in direct contact with patients. Group III: Twenty attendants of blood bank for blood donation.
Results & Discussion: Questionnaire was done to find the general risk factors which were minimum and environmental risk factors which were very high because of adsent good policy of protection against exposure for the workers. The disappointing opsition was the very low number of vaccinated staff against HBV which was one (50%) comparable to USA hospital vaccination program (50- 75) Screening this group of HU for HB&HCV infections & comparing with another two groups of hospital employers & blood donors from blood bank, we found that prevalence of infection was higher (10%) in HU staff more than other groups with low risk of exposure. This study shows that there should be an efficient joint infection control / occupational health program for the follow-up of accidental blood or bloody fluid exposures in health care workers.

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Abstract Form

Title : 10102 - NOSOCOMIAL PATHOGENSIN NEONATL INTENSIVE CARE UNIT

Author (s) : Shadia E. Micheal and Samia E. Fikri

Introduction : It is unrealistic to hope for a germ free NICU, but it is possiple to reduce the likelihood of hygiene . The NICU hygiene is affected drastically by the medical staff and the internal environment .
This study will describe some of interactions between the laboratory and the improper housekeeping procedures .

Methods: The present study was conducted in NICU Damanhour Teaching Hospital . Where the cleanliness and sanitation was evaluated by bacterioloical examination of the umbilical stump and the internal environment of the wards represented by floor , air , bady balance, bady heater , air condition device and bady care units.

Results: The study revealed the failure of the routine housekeeping process. The study suggested 3 categories to control and prevent NICU Nosocomial infections . Also suggested a technic for cleaning and sanitation of wards bady incubators.
The technic succeede 100% in the removing all pathogenic microorganism.

Gonclusion: The study revealed faiture of routine housekeeping process, and suggests 3 methods to control and prevent NICU nosocomial infections, it also proposed a new technique, for cleaning Wards and bady incubators, and assures result of 100% in removing pathogenic microorganisms.

10307 - Oxidative DNA Damage in Relation to Cigarette Smoking and Areca Quid Chewing

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Abstract

Carcinogenic constituents in cigarette smoke and areca (betel) quid may contribute to the formation of reactive oxygen species for users of these substances. Almost all areca quid chewers are also cigarette smokers in Taiwan. In this study, we recruited 170 healthy male volunteers and investigated urinary 8-Hydroxydeoxyguanosine (8-OHdG) as a biomarker of oxidative damage from cigarette smoking and areca quid chewing. The level of urinary 8-OHdG was significantly higher for areca quid chewers than for non-chewers (14.4 ± 4.9 vs. 12.1 ± 4.7 μg/g creatinine in mean ± standard deviation; n = 36 and 128, respectively) regardless of smoking and occupational status. In reference to non-users, controlling for age, education, occupation, exercise and alcohol consumption in the multivariate logistic regression model, the odds ratios of having elevated urinary 8-OHdG (> 12.1 μg/g creatinine) were 3.1 (95% confidence interval (CI) = 1.2-7.7) for men using both cigarette and areca quid and 2.4 (95% CI = 1.1-5.2) for men using cigarette but not areca quid. Our study suggested that areca quid chewing has an additive effect to the oxidative damage of cigarette smoking.

Keyword: cigarette smoke, areca quid, oxidative damage, 8-Hydroxydeoxyguanosine

10324 - Nutritional factors and blood pressure: The impact of cultural and environmental differences among four Chinese populations

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Objectives: To investigate the impact of cultural and environmental differences on the association between dietary exposure and blood pressure among Chinese Han (the majority of Chinese population) and three other minority populations.

Methods: A sample of 1,605 subjects aged 48-56 years, with a standardized cross-sectional study design, was investigated. The participants included Han (775), Uygur (501), Kazak (204) and Tibetan (125) subjects located in ten cities of China. Various markers of diet-related factors were measured by using 24-hour urine sample. Blood pressure (BP) was measured using a standardized automatic BP machine. Hypertension was defined as those who had systolic BP≥140 mmHg or diastolic BP≥90 mmHg or those under anti-hypertensive drug therapy.

Results: (1) There were significant differences in mean BP and prevalence of hypertension (HT), with being higher in the Kazak and Tibetan subjects than in Han and Uygur subjects. (2) The highest age- and sex-adjusted mean body mass index (BMI) was observed in the Kazak (25.9 ±0.4 kg/m^2). The highest age- and sex-adjusted mean 24-hour urinary sodium (Na, a marker of salt intake), and Na to potassium ratio (Na/K) excretion were observed in the Tibetan (Na: 253.7±10.2 mmol/day; Na/K ratio: 7.7±0.4). There were significant differences in other dietary markers, including urinary magnesium (Mg), 3-methylhistidine (3MH) (a biological marker of animal protein intake) and taurine (a biological marker of seafood intake) excretion among the four ethnic population samples ($p<0.01$). (3) Lifestyle and living environment (by geography) were much different among the four ethnic populations (such as, Tibetan people customarily drink a lot of tea with salt). (4) In general, BMI, Na, Na/K ratio were positively and 3MH/creatinine and taurine/creatinine ratios were negatively associated with BP. The strengths of this association, however, were different (age- and sex-adjusted Pearson correlation coefficients ranged from 0.11 to 0.54; $p<0.05$ or $P<0.01$). (5) After adjustment for age, sex and K, relative risks (95%CI) of being HT among subjects with BMI ≥26 kg/m^2 were 3.56 (2.16-5.86), 4.64 (2.22-9.67), 3.29 (1.41-7.66), and 0.46 (0.04-5.74) in Han, Uygur, Kazak and Tibetan subjects respectively. The adjusted relative risks (95%CI) for subjects with Na≥244 mmol/day were 1.28 (1.08-4.67), 3.21 (1.42-7.26), 1.27 (0.53-3.03), and 1.18 (1.03-1.35), respectively for the corresponding four ethnic population samples.

In conclusion, the study, for the first time, provides a representative sample of four Chinese ethnic populations and indicate that differences in blood pressure among the four populations are associated with differences in dietary intake, which in turn are associated with culture and environmental differences.

10422 - The Health and Economic Impact of Thailand Unleaded Gasoline Policy. *Vichit-Vadakan, Nuntavarn; **Sasivimolkul, Wanida; and *Aungudornpukdee, Janchai
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INTRODUCTION

The Royal Thai Government recognizes the severe toxicity of lead to human health and began a nation-wide phase out in 1996. Consequently, from 1994 to 2000, the annual average of ambient lead levels in BMA showed a decreasing trend from 0.30, 0.13, 0.09, 0.07, to 0.05 ug/m^3 respectively. It is hypothesized that the nation-wide phase out of leaded gasoline since 1996 led to the improvement in the health of population. The goal of this study is to demonstrate the benefits of unleaded gasoline policy both in terms of health and valuing in monetary terms as cost benefit.

METHODOLOGY

The study involved two groups of population; one group was school children who are most adversely affected by the toxicity of lead and the other was the traffic policemen who are highly exposed to ambient lead due to their occupation. The same six elementary schools under the BMA school system that participated in the study conducted by the Ministry of Public Health in 1993 before the implementation of the unleaded gasoline policy agreed to be recruited into the present study. Parents of 889 students consented to have their children tested for blood lead levels. A total of 810 traffic policemen gave consent to participate in this study; of which a cohort of 449 traffic policemen whose previous blood lead level measures before the leaded gasoline phase out are known are followed up in this study. In addition to blood lead levels, this study employed questionnaire to assess other possible sources of lead.

RESULTS

The results of the study indicated that the blood lead levels were much lower after the initiation of the unleaded gasoline policy in both groups. The average blood lead levels in school children were 5.58 ug/dl as compared to 8.56 ug/dl in 1993. About 2 percent of the sample showed blood levels higher than the safety standard of 10ug/dl, whereas, in 1993 the percentage exceeded the standard was about 26%. The traffic policemen showed similar average blood lead levels of 5.86 ug/dl and about 5 percent of the sample had blood lead levels higher than the standard of 10ug/dl. Among of the cohort of 449 policemen, more than 90 percent had lower blood lead levels after the implementation of the unleaded gasoline.

Lowering of blood lead levels in the population may be translated into health benefits in terms of reductions of IQ loss effect on lifetime earnings in children, hypertension, heart disease, and strokes cases, and premature mortality in adults. Therefore, the benefits derived from the unleaded policy in Thailand may be quantified into monetary values in the amount of 179 thousand million baht. In comparing to the costs of removing the lead

out of the gasoline and other associated costs in the amount of 5 thousand million baht, the benefits far outweighed the costs in the benefit-cost ratio of about 37.

There were still a number of subjects whose blood lead levels exceed the standard. In studying the risk factors, it was found that both the children and traffic policemen had one common risk factor and, that is, exposure to house paint. Children whose family member employed as painter had a risk of having their blood lead levels exceeding standard nine times higher than children who do not. Similarly, the traffic policemen who painted their bathrooms or have broken paint chips in their house had almost three times higher risk of having their blood lead levels above the standard.

Abstract # 10653

Measurement of PM_{10} and Particle-Phase PAHs from Anthropogenic Sources in Korea

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Abstract

Internal and external combustion processes are major sources of particulate matter and PAHs, which may cause outdoor/indoor air pollution and may be associated with certain public health problems. However, few data are available for PAHs and PM_{10} emitted by vehicles, municipal solid waste incinerator, and factory stacks in Korea. On-road vehicle and stationary emissions of 16 particle-phase PAHs and PM_{10} were measured in Seoul, Korea from March 2000 to April 2000. Samples for on-road vehicle emissions were collected in two tunnels. Samples for stationary emissions were collected from two municipal solid waste incinerators, which burn residential solid wastes and two commercial boilers. One boiler used Bunker-C oil (B-C), which is rich in heavy carbons, sulfur, and in soot-forming ingredients. The other boiler used liquefied natural gas (LNG), which is composed primarily of methane (typically, at least 90%).

On-road emission factors of particle-phase total PAHs in Bookak and Namsan tunnels were 1.98ug/km and 2.52ug/km, respectively. PM_{10} emission factors in Bookak and Namsan tunnels were 48.24mg/km and 53.90mg/km, respectively. Among the 16 individual PAHs, pyrene was the most abundant species measured in both tunnels. Stationary emission factors of particle-phase total PAHs for the two municipal solid waste incinerators were 0.85μg/kg-waste and 0.46μg/kg-waste. PM_{10} emission factors were 1.22mg/kg-waste and 0.53mg/kg-waste in both utilities. Particle-phase total PAHs emission factors for the Bunker-C boiler and for the LNG facility were 0.74ug/kg-fuel and 0.26ug/kg-fuel, respectively. The Bunker-C boiler had higher PM_{10} emission factor (70.22mg/kg-fuel) than the LNG facility (0.52mg/kg-fuel). Phenanthrene and anthrance were prominent species among the 16 PAHs emitted from these four stationary sources. The results also suggested that ambient pyrene and BaP, which are suspected carcinogens in humans, could be related to on-road emissions. Therefore, it would be necessary to reduce vehicular PAHs emissions for the prevention of possible human health effects caused by particle-phase PAHs.

11071 - TIME-RELATED ASSOCIATIONS BETWEEN LOCAL METEOROLOGICAL FACTORS AND DENGUE HEMORRHAGIC FEVER HOSPITAL ADMISSIONS IN ILOILO PROVINCE, PHILIPPINES

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BACKGROUND: Dengue is a global emerging infectious disease that is transmitted from person to person primarily by day-biting, anthropophilic female *Aedes* mosquito species. The severe form of the infection is the hemorrhagic type, known as Dengue Hemorrhagic Fever (DHF), which is characterized by shock due to circulatory failure and associated with a high fatality rate. An epidemic of Dengue and DHF occurred in IloIlo Province in 1998 that showed steeply increasing incidence prior to the onset of the rainy season and that affected older children and adults. While case-control studies have identified water-conserving practices and local environmental management strategies as risk factors for dengue, previous studies of seasonal trends associated with DHF in the Philippines have focused primarily on rainfall and have not assessed the influence of temperature and relative humidity. Earlier epidemics of Dengue and DHF in the Philippines have been described as mainly affecting younger children.

OBJECTIVES: 1) to characterize age and gender time-related trends associated with DHF hospital admissions over a ten year period for a province located in a predominately rural region of the central Philippines and 2) to examine associations between rainfall, temperature and relative humidity and DHF hospital admissions.

METHODS: Counts of clinically confirmed (WHO definition) DHF daily admissions were obtained for the period 1990 -1999 from the National Epidemiology Sentinel Surveillance System (NESSS), Philippine Department of Health, Manila, and summed into monthly totals. Daily minimum and maximum temperature, rainfall and relative humidity data were obtained from local Iloilo weather stations, monthly totals generated and validated. Five-year age and gender stratified census data were provided by Iloilo City and Provincial Statistics Offices for the two census years and intercensal years interpolated. Cases were categorized: (males and females; 0-5 years, 6-19 years, 20 years +). Sinusoidal curves were fitted to monthly standardized incidence rates to assess the existence of seasonal patterns. Influence of independent climate and demographic variables were determined by maximum likelihood estimation using Poisson regression (SAS V. 8.1). This study received research ethics approval.

RESULTS: 4586 DHF cases, aged 10 days old to 76 years (49.7% males) were admitted in 1990-1999. The highest admission count of 2076 was in 1998 and the lowest of 55 was in 1999. The age mode increased from 4 to 8 years over the decade. Seasonal trends were highly significant. Bimodal peaks were observed in 1991, 1992, 1996 and 1999. Poisson regression analysis of the combined age and gender groups showed that temperature (β = 0.2873), followed by rainfall (β = 0.0312) and relative humidity (β = 0.0247) were all significant independent predictors of DHF incidence, with temperature being the most significant.

CONCLUSIONS: These data support the need for greater understanding and vigilance of the full spectrum of meteorological factors, particularly temperature, as predictive indicators for DHF onset in tropical regions.

Pediatric Blood Lead Evaluation in Yap State, Federated States of Micronesia

To be presented by Gary P. Noonan, CDC

BACKGROUND: Following a January 2000 nutritional survey on Yap Island in the Federated States of Micronesia (FSM) which identified elevated blood lead levels [BLLs] among some children, we performed a study to better characterize pediatric BLLs and identify associated risk factors.

METHODS: We collected blood samples from children at randomly selected schools and municipality sites. We obtained demographic and lead exposure information from parents by self-administered questionnaires. In a concurrent nested case-control study, parents of cases (BLL 15 micrograms/deciliter µg/dL]) and age-matched controls (BLL<5µg/dL) completed interviewer-administered questionnaires; environmental sampling was conducted at participants homes.

RESULTS: The geometric mean [GM] of the BLLs for the 424 participants was 6µg/dL. While the GM BLLs of Native Yapese children and resident non-Micronesians were comparable (4.3 and 4.2µg/dL), Outer Island children had significantly higher levels (8.1µg/dL, p 0.05). Children living in neighborhoods where lead was recycled had significantly higher GM BLLs than those who did not (7.2µg/dL vs. 4.6µg/dL, p 0.05). Children whose families made lead fishing sinkers at home also had higher GM BLLs (5.7µg/dL vs. 4.5µg/dL, p = 0.06). Case childrens homes were more likely than control homes to have detectable levels of lead in soil (odds ratio [OR] = 7.4, 95% Confidence Interval [CI] = 2.0-27.8) and household dust (OR = 11, CI = 2.1-56.7).

CONCLUSIONS: The GM BLL of children surveyed on Yap exceeds that of same-aged US children as measured in National Health and Nutrition Examination Survey III [NHANES III], and Outer Island ethnicity was significantly associated with having an increased BLL. Local environmental contamination due to handling lead is a likely source of elevated BLLs among children surveyed.